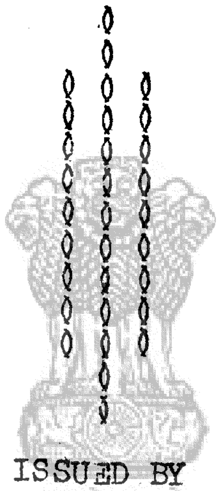
DGE&T/IS/5

REPORT ON

EMPLOYMENT IN PAPER INDUSTRY



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FOREWORD

In pursuance of the recommendations of the Dantwala Committee an Inter-Departmental Technical Committee set up by the Planning Commission in 1970, suggested that the industry surveys should be conducted by the Directorate General of Employment & Training with the following objectives:-

i) to study the manpower situation in specific industries which are of vital importance from the point of view of development and employment creation; and

ii) to anticipate the manpower requirements of these industries well in advance so as to guide the youth into productive channel of employment

This present report relates to the 'employment pattern in Paper Industry' and is fifth in the series of such industry survey reports as have been brought out so far by the Industry Survey Unit in the DGE&T. The report is based on the data elicited through the mail questionnaires from the various establishments engaged in paper manufacture and paper products in different States in India. In the present report, salient features of the paper industry have been described in general, and a great deal of emphasis on employment pattern and the likely additional manpower requirement have been discussed in particular. It is hoped that the findings in this present report would be of great value not only to the vocational guidance officers and career masters, but also to the manpower agencies and training institutions engaged in manpower planning and training programmes

This survey has been organised and conducted under the supervision of Shri V.K. Rajagopalan, Deputy Director of Employment Exchanges. He was assisted in the processing of data and in the preparation of the report by Sarvashri J.N. Prasad, Assistant Director of Employment Exchanges, O.P. Maurya, Research Officer, R.S. Vashist, Assistant Employment Officer, H.C. Trivedi, Senior Investigator, V. Kumar, M.L. Bansal and Abnash Singh, Junior Investigators, Dalip Singh and Mohinder Pall, Junior Computors. The report was drafted by Shri O.P. Maurya, Research Officer under the guidance of Shri J.N. Prasad, Assistant Director of Employment Exchanges. I would like to place on record the appreciation of the efforts made by them in the collection and processing of data and publication of the report.

(S.P. Taneja)
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August 1977
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Chapter - I

Introduction

GENESIS 1.1 The problem of unemployment and underemployment is causing a great concern to the underdeveloped and developing countries. In India, unemployment is not merely uncomfortably but tragically high in almost all part of the labour force particularly the educated youth. One of the factors responsible for a good deal of unemployment in India is mainly due to the disproportionate growth of population and industry. When the population increases unplanned and unchecked, naturally many people are likely to remain unemployed. Hence to provide employment to a large number of unemployed persons according to their educational and professional background, Government has to evolve certain schemes to find out the field in which there is a vast scope for absorption of different kind of skills. To find out the field in which there is a vast scope of employment opportunities, one of the methods contemplated suitable is the method of vocational guidance and career counselling. In view of the immense moemntum of vocational guidance and career counselling programme, the inter-Departmental Technical Committee. set up by the Planning Commission in 1970 to examine the follow-up action on the recommendations made by the Dantwala Committee, recommended that the Directorate General of Employment & Training should conduct such 'Industry Surveys' as are important from the stand point of rendering vocational guidance and career counselling to the youths into the productive channel of employment

1.1.1 Accordingly, a pilot survey on Radio & Television Industry was conducted in 1972 and the report released in 1973. Thereafter the other reports brought out are Drugs & Pharmaceutical Industry, Fertilizer and Cement Industry. The present report on Paper Industry is the fifth in the series of Industry Survey reports.

OBJECTIVES:

1.2 The main objective of the Industry Surveys is to study the manpower situation in selected industries which are vital from the point of view of development and employment creation with a view to anticipate the manpower requirements to individual industry well in advance, so as to guide the youth into productive channel of employment and to gear up the training programmes to the manpower needs of the industry. Thus, the industry surveys are not only useful to the vocational guidance officers, career masters, etc. but also to the agencies and Institutions engaged in manpower planning and training programmes.

SELECTION OF INDUSTRY COVERAGE & METHODOLOGY:

1.3 The following types of industries are covered in these surveys;

i) Industries with employment potential involving a wide spectrum of skills and dispersed through-out the country.

ii) Industries which offer avenues for self-employment through ancillaries.

iii) Emerging industries involving new techniques of production and new skill requirements.

1.3.1 In all, 314 establishments engaged in paper manufacturi and paper products in the organised sector of economy were selected for the survey. Out of these 314 establishments, about 66 establishments were excluded due to various reasons such as closure of establishments etc. Thus, in all 248 establishments engaged in paper manufacturing and paper product were addressed, of which only 177 establishments responded to this enquiry; the response being about 71%. The survey was conducted on 'mail-questionnaire' method.

1.3.2 For eliciting data on several aspects of this industry like present employment, investment, production, occupational break up, method of recruitment, manpower shortages, training programmes, likely additional employment requirements in different skills etc., a questionnaire designed for the purpose, was despatched to all the establishments covered in the prresent survey. The copy of the questionnaire is at Appendix-I.

RESPONSE:

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1.4 The questionnaires were addressed to 314 establishments engaged in the paper manufacture and paper product. Of these establishments 66 units were excluded owing to the fact that either these units might have been closed or been started production of other items. Thus, of the remaining 248 establishments which were really covered, 177 establishments responded to our enquiry; the response being 71%. Appendix-II gives the Statewise detailed position of the degree of response. Of all the states covered in the study, the response of Maharashtr West Bengal, Tamil Nadu, Uttar Pradesh, Delhi and Haryana was higher.

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CHAPTER - II

GROWTH OF PAPER INDUSTRY

tructure of aper Industry

2.1 The paper industry has contributed a lot to the economic growth and development of the country for over the last two decades. In fact, paper is substantially an item of mass consumption. With the persistent growth in population, spread of literacy, growth and development of number of industries and improvements. in living standards, the demand for paper has substantially increased. The industry at present has 64 paper mills*, comprising 18 large integrated mills and 46 small units, with a total installed capacity of 997,000 tonnes a year.

2.11 The paper industry is highly capital intensive industry. Capital costs in the paper industry have been rising fast and a new paper mill of 100 tonnes a day capacity today needs capital outlay of Rs.40 crores. Growth of demand for paper is influenced by various factors like increase in population industrial production, spread of education, national income, improvement in the standards of living, etc. According to the Task Force set up by the Planning Commission, in the course of the next two decades, the demand for paper is likely to increase to about 4 million tonne per annum. The requirements of raw materials for attaining the annual production target has to be met utilising the cellulosic raw materials from natural forests.

onnes from the resent level of bout one illion supplemented by man made plantation, agricultural residues and bagasse, etc., and by adopting newer pulping techniques such as semi-chemical and other high yield pulping processes. With a view to achieve the target under the Fifth Plan the Government of India has issued industrial licences for an additional capacity of paper and paper board.

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* i.e. as registered with the D.G.T.D., Ministry of Industries and Civil Supplies, Govt. of India.

2.18 According to the Task Force there are about 240 establishments spread all over the country which are engaged in the paper products, manufacturing carbon paper, corrugated boards, bags duplicating stencils and rigid and flexible packaging materials like cartons, adhesive tapes, laminates of paper with films and foils, paper cups, etch. Such units engaged in the paper product materials are registered with the Deputy Commissioner, Small Scale Industries, Govt. of India. According to the Task Force the value of products manufactured has been estimated at over Rs. 40 crores which helps in the packaging of various commodities worth over Rs.800 crores annually. The salient features of the growth of paper industry as revealed by the information received from the responding establishments, are given in the following paragraphs.

Year of Establishment

2.2 The information elicited *inter alia* on the year of establishments of the various units engaged in paper manufacture and paper products reveals that there were as many as 43 establishments functioning till the end of 1950. The table given below shows the year of establishment of the units covered in the present survey.

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Table-1

Units classified by year of establishments

S.No.	Period	Number of Units	Percentage distribution
1.	Upto 1950	43	24.29
2.	1951 - 1955	17	9.60
3.	1956 - 1961	45	25.42
4.	1962 - 1967	51	28.81
5.	1968	3	1.70
6.	1969	7	3.95
7.	1970	4	2.26
8.	1971	3	1.70
9.	1972	3	1.70
10.	1973	1	0.57
	TOTAL	177	100.00

The above table shows that until 1950, about 43 units were engaged in the manufacture of paper and paper products in India. After 1950 there has been a gradual increase in the establishment of the units in different years. It is, however, seen that during the Second and Third Plan periods more than 50% units were established in the country. From 1968 onwards the progress was very slow as only 21 units were established during this period.

2.3 The growth of paper industry in India is linked with the development of suitable techniques of science and technology. Indian paper industry has developed essentially on the concept of integrated mills manufacturing pulp and converting it into paper in the same premises. The scope of manufacturing activities as indicated by the responding units....

covered in the present survey has been classified into ten groups. The table given below shows the distribution of units engaged in various types of paper products and paper manufacturing activities.

Table-2

Distribution of Establishments according to products manufactured.

Sl. No.	Description	No. of Units.	Percentage of total
1.	Writing, Printing and White paper including industrial paper such as wrapping & packaging paper and paper mill board.	60	33.90
2.	Carbonising tissue, Filter Paper Cigarette tissue, Insulating paper.	2	1.13
3.	Newsprint	1	0.57
4.	Rayon-grade pulp	1	0.57
5.	Compositive, X-ray, Sound films Rolls film, 35mm.	3	1.70
6.	Gummed paper tapes, foils, metallic yarn, stamping fuil.	6	3.39
7.	Cartons, labels, paper cups, playing cards, folders, Brochures, Paper cones, tubes etc.	65	36.72
8.	Sensitized Paper	4	2.26
9.	E.C.G. Paper, Carbon Paper, T.W. Ribbon, Stencil Papers, etc.	5	2.82
10.	Water proof, packing paper, wax coated paper, office files jute tined paper, etc.	30	16.95
	Total :	177	100.00

The above table shows that of the 177 units which responded to our enquiry, 60 (34%) units were engaged in the manufacture of writing, printing and white paper including industrial paper such as wrapping and packaging paper and paper mill board. The remaining 117 (66%) units were engaged in the paper products like carbonising tissue, filter paper, cigarette tissue, rayon-grade pulp, paper cups, stensitized paper, water proof-packing paper, wax coated paper, office files, etc.

pital: vestment

2.4 Paper industry is classified as one of the most highly capital-intensive industries. A project generally takes 6 to 7 years from inception to start up of production. The growth of industrial expansion and development depends largely on the volume of labour force and the pattern of capital investment. In order to study the pattern of employment of various occupational skills in paper industry, the establishments were requested to furnish the information about the investment representing the fixed and working capital from the year 1969 to 1973. Almost all the establishments covered in the present survey supplied the information on capital investment. The table-(3) given below indicates the position regarding the distribution of units according to the size of investment.

Table-3

Distribution of Units according to the Size of Investment.

S.No.	Investment (in Rs.)	No. of Units	%Distribution
1.	Below One lakh	31	17.51
2.	1 - 2 lakhs	16	9.04
3.	3 - 6 lakhs	37	20.90
4.	7 - 10 lakhs	9	5.09
5.	11-20 lakhs	21	11.87
6.	21-50 lakhs	22	12.43
7.	51-99 lakhs	10	5.65
8.	100 lakhs and above	31	17.51
	Total:	177	100.00

The closure scrutiny of the investment data as furnished by the responding establishments reveals that about half of the establishments have an investment of more than Rs.10 lakhs. About 17.5% of the establishments have investment of more than one crore which shows that the paper industry is highly capital intensive.

2.5 The growth of paper industry can be seen from the dimension of capital investment made by the establishments over the years. The table 4 given below indicates the position of total investment made by the responding units over the last five years.

Table-4

Dimension of capital investment

Year	Investment	Percentage increase over previous year
1969	1,62,17.62	-
1970	1,70,02.22	(+) 4.84
1971	1,83,95.44	(-) 8.19
1972	2,09,74.89	(*)14.02
1973	2,24,44.87	(+) 7.01

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The above table shows that there has been a persistent increase in the amount of investment during the last five years. The capital investment in the paper industry, however, continued to show an accelerated trend of growth; the rate of growth recorded in 1973 over the past four years being about 38%. The statewise analysis of investment have been given in the Appendix-III. The larger share of investment have been in the southern States particularly in Andhra Pradesh and Karnataka.

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PRODUCTION:

2.6 According to the task force, the present production of paper and paper boards more or less fully meets the domestic requirements, except in the case of certain high cost and speciality industrial papers, the demand for which is met by imports amounting to about Rs.65 millions annually. Newsprint production still lags behind demand and over 75% of the requirements have to be met by imports involving an annual foreign-exchange expenditure of about Rs.250 millions. Production of rayon grade pulp is adequate to meet more or less fully the requirement for staple fibre and filament yarn, whereas superior grades of pulp for manufacture of tyre card yarn have to be imported involving foreign exchange of about Rs.45 millions annually. Only the high quality long-fibred pulps needed for blending in the production of various grades of speciality papers have to be imported to the extent of about 10,000 tonnes/year valued at about Rs.20 millions. Though the capacity for manufacture of straw and mill boards is utilised only partially, the production meets the demand for the product fully*.

2.7. The units engaged in the paper manufacture and paper products covered in the present survey also furnished the information on value of production. The year-wise position of value of production, and the percentage increase over previous year has been given in the following table.

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* Report of the Task Force for Pulp, Paper & Allied Industries, Government of India, Planning Commission, 1973, P.70.

Table - 5

Value of Production

(Figures in Rupees (Lakhs)

Year	Total Production	Percentage increase
1969	1,09,17.09	-
1970	1,24,40.48	(+) 13.95
1971	1,41,09.88	(+) 13.42
1972	1,62,52.05	(+) 15.18
1973	1,79,62.50	(+) 10.52

The above table shows that in 1969 the value of production was Rs.1,09.17.crores which increased to Rs.179.62 crores in 1973 There was an increase of about 64.5% in the value of production in 1973 over 1969.

2.8 **Encouraging trends in production both in terms of** value and percentage increases have been noticed in the States of Karnataka, Andhra Pradesh, Maharashtra and Orissa. Statewise position of the value of production and percentage increases have been given details in Appendix-IV.

Employment

2.9 The growth of employment within a particular industry largely depends upon the growth of investment and rate of returns. The growth in the annual quantum of capital investment made by the entrepreneurs over the years has already been seen in the foregoing paragraphs. The growth in employment in paper industry, to the greater extent, depends upon the diversity of products, various processes of manufacture involved and the number of components which adequately constitute the final products and also the team of employees possessing varying degrees of skills who help in giving the final shape to the products. The paper industry has been found to be most instrumental in generating employment opportunities to the various kinds of labour force in the country.

2.10 The information collected on employment from the establishments covered in the present survey shows that the volume of employment of almost all types of workers engaged in the units in the manufacture of paper and paper products has been greater because of an increase in the volume of capital investment and production capacity. The distribution of units classified according to the number of persons employed during the year 1973 is given in the following table.

Table 6

Distribution of units according to size of employment as on 31st December 1973.

Size class	No. of units	Employment Male	 Female	 Total	Average employment per unit
1.	2.	3.	4.	5.	6.
Upto 9	32 (18.08)	232 (0.39)	1 (0.11)	233 (0.38)	7.28
10 - 24	32 (18.08)	496 (0.82)	10 (1.15)	506 (0.83)	15.81
25 - 99	37 (20.90)	1830 (3.04)	37 (4.25)	1867 (3.05)	50.46
100-499	49 (27.68)	11763 (19.52)	173 (19.89)	11936 (19.53)	243.59
500-999	7 (3.96)	5162 (8.57)	65 (7.47)	5227 (8.55)	746.71
1000 & above	20 (11.30)	40770 (67.66)	584 (67.13)	41354 (67.66)	2067.70
Total:	177 (100.00)	60253 (100.00)	870 (100.00)	61123 (100.00)	545.33

The above table shows that of the 177 units 28.16 percent had below 10 and between 10-24 employees. The proportions of units with 25-99, 100-499 and 500-999 employees were 20.90, 27.68 and 3.96 per cent respectively. The percentage of units having 1000 and above employees was, however, 11.30.

2.11 With regard to the growth of employment in the units which have responded to the survey, an idea can be formed from the yearwise figures of employment presented in the following table.

Table - 7

Year-wise Growth of Employment between 1969 and 1973.

Year	Employment in the units engaged in Paper manufacture	Employment in the units engaged in Paper Products.	Employment in the units engaged in Total	Percentage increase Paper Manufacture	Percentage increase Paper Products.	Percentage increase Total
1.	2.	3	4	5	6	7
1969	39,710	11,559	51,269	-	-	-
1970	42,498	12,088	54,586	7.02	4.58	6.47
1971	44,101	12,615	56,716	3.77	4.36	3.90
1972	45,662	13,579	59,241	3.54	7.64	4.45
1973	47,368	13,755	61,123	3.74	3.18	3.18

The above table shows that employment in paper industry increased by 19.22 per cent in 1973 over 1969. Appendix-V. gives a comperative idea of growth of employment in different States during the corresponding period. The analysis of employment shows that in Karnataka the employment rose by 35.59 per cent in 1973 over 1969, followed by 29.03, 27.01 and 22.04 per cent in Maharashtra, Madhya Pradesh and Andhra Pradesh respectively As against total employment in 1973, the highest proportion of employment i.e. 19.42% was observed in West Bengal, followed by Maharashtra (13.80%), Orissa (12.85%), Karnataka (12.26%) and Andhra Pradesh (10.71%).

2.12 The sex-wise and sector-wise data on employment was collected from the establishments covered under the present survey. The following table presents sex-wise employment position in the paper industry.

Table-8

Sex-wise Employment

Year	Male	Female	Total	Percentage of female to total
1963	50,534	735	51,269	1.43
1973	60,253	870	61,123	1.42
Percentage increase	(19.23)	(18.37)	(19.22)	

The above table shows that women employees contribute only 1.43% in 1969 and 1.42% in 1973 to the total employment of these two respective years. This shows that the industry is however, not encouraging for employment of women.

2.13 The following table indicates the sectorwise position of employment in paper industry.

Table 9

Sectorwise employment

Year	Public Sector	Private Sector	Total	Percentage of employment in Public Sector to total
1969	10,512	40,757	51,269	20.50
1973	12,475	48,648	61,123	20.41
Percentage increase	(18.67)	(19.36)	(19.22)	

The above table shows that the proportion of employment in the public and private sectors almost remained the same during these years.

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CHAPTER-III

Occupational Structure

Industry Discipline:

3.1 Scientific & Technological advancements in paper industry have undergone redical change in the last two decades, resulting in substantial cost reduction by way of savings in Chemicals, steam, power water etc. In order to be able to compete in the national as well as international markets and to accelerate the efficiency and promote stability of this industry, it is essential that new processes and designs with greater efficiency of persons of varied skills be introduced in a phased manner.

Establishments furnishing occupational data:

3.2 The information on occupational break up was gathered from the establishments covered during the course of present survey Scrutiny of the data collected from 177 establishments revealed that there were about 120 occupations in the paper industry The sex-wise detailed occupational distribution of employment in the industry during the years 1969 to 1973 is indicated in Appendix-VI. The table presented below gives the distribution of employees in 177 establishments responded to the enquiry, by broad occupational divisions.

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Distribution of employees by occupational Divisions

S. No.	Division	Description	No. of employees as on 31st December						Percentage increase
			1969			1973			
			Men	Women	Total	Men	Women	Total	
1	2	3	4	5	6	7	8	9	10
1.	0 & 1	Professional, Technical & Related workers.	2055 (4.07)	41 (5.58)	2096 (4.09)	2517 (4.18)	49 (5.63)	2566 (4.20)	22.2
2.	2	Administrative, Executive and Managerial Workers	475 (0.94)	6 (0.82)	491 (0.94)	523 (0.83)	5 (0.57)	530 (0.88)	11.9
3.	3	Clerical & related workers	5268 (10.43)	92 (12.52)	5360 (10.45)	6209 (10.31)	84 (9.66)	6293 (10.30)	17.4
4.	4	Sales workers	122 (0.24)	- (-)	122 (0.24)	141 (0.23)	- (-)	141 (0.23)	15.6
5.	5	Services Workers	1831 (3.62)	37 (5.03)	1868 (3.64)	2151 (3.57)	48 (5.52)	2199 (3.60)	17.7
		armers, Fishermen, Hunters, jers & related workers	66 (0.13)	- (-)	66 (0.13)	199 (0.33)	- (-)	199 (0.33)	20.15
7.	7,8&9	Production and related workers Transport Equipment Operators and Labourers	40717 (80.57)	559 (76.05)	41276 (80.51)	48503 (80.50)	684 (78.62)	49187 (80.47)	19.2
		Total:	50534 (100.0)	735 (100.0)	51269 (100.0)	60253 (100.0)	870 (100.0)	61123 (100.0)	19.2

The data presented in the above table shows that the craftsmen and production process workers contributed over 80% to the total employment. The table further shows that share of professional, technical, administrative, executive managerial, clerical and sales workers was marginal. In terms of increase, significant increase were observed in the professional, technical and production process workers.

Distribution of employees by occupational divisions according to nature of establishments

Sl. No.	Occupational Division	Description	Paper Manufacture						Paper Products					
			1969			1973			1969			1973		
			Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
1.	2.	3.	4.	5.	6.	7.	8.	9	10.	11.	12.	13.	14.	15.
1.	0 & 1	Professional, Technical and related workers	1548 (3.95)	33 (6.21)	1581 (3.98)	1938 (4.14)	41 (6.69)	1979 (4.18)	507 (4.47)	8 (3.92)	515 (4.46)	579 (4.29)	8 (3.11)	587 (4.27)
2.	2	Administrative, Executive and managerial workers.	155 (0.40)	- (-)	155 (0.39)	199 (0.43)	- (-)	199 (0.42)	320 (2.82)	6 (2.96)	326 (2.82)	334 (2.47)	5 (1.95)	339 (2.46)
3.	3	Clerical & related workers.	4015 (10.25)	33 (6.21)	4048 (10.19)	4704 (10.06)	36 (5.87)	4740 (10.01)	1253 (11.03)	59 (28.92)	1312 (11.35)	1505 (11.15)	48 (18.68)	1553 (11.29
4.	4	Sales workers	29 (0.07)	- (-)	29 (0.07)	33 (0.07)	- (-)	33 (0.07)	93 (0.82)	- (-)	93 (0.80)	108 (0.80)	- (-)	108 (0.79
5.	5	Farmers, Fishermen, Hunters, Loggers & related workers,	1538 (3.92)	34 (6.41)	1572 (3.96)	1776 (3.80)	44 (7.18)	1820 (3.84)	293 (2.58)	3 (1.47)	296 (2.56)	375 (2.78)	4 (1.56)	379 (2.76
6.	6	Service workers.	66 (0.17)	- (-)	66 (0.17)	199 (0.43)	- (-)	199 (0.42)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
7.	7,8&9	Crafts, Production & related workers Transport equipment operators & labourers.	31828 (81.24)	431 (81.17)	32259 (81.24)	37906 (81.07)	492 (80.26)	38398 (81.06)	8889 (78.78)	128 (62.75)	9017 (78.01)	10597 (78.51)	192 (74.70)	10789 (78.43
		TOTAL	39179	531	39710	46755	613	47368	11355	204	11559	13498 (100.0)	257 (100.0)	13755 (100.0)

&

3.3 Besides the major proportion of employment shared by the occupational group viz., craftsmen and production workers, the above table shows that in case of establishment engaged in paper manufacture, this group of occupations viz., craftsmen and production workers contributed about 81% of the total employment in 1978 while in the establishments engaged in paper product the same group of occupation contributed a little over 78% the same year.

scribed lifications:

3.4 The establishments covered under the present survey were also asked to furnish information in respect of qualifications and experience required for a specific occupation. The scrutiny of data reveals that almost all the establishments furnished more or less similar qualifications and experience for a similar occupation which is due to the fact that each occupation carries specific function in accordance with the qualification and experience. A statement describing the minimum entry qualification in respect of important occupations in the paper industry is given at Appendix-VII.

3.5 The minimum educational qualifications and experience prescribed for a few important occupations is indicated in the following table.

Table 13

Occupation	Qualification & Experience
1. Chemist (General)	B.Sc with Chemistry as one of the subjects and 5 to 10 years experience. Or M.Sc. in Chemistry with 5 years experience.
2. Electrical Engineer	Degree in Electrical Engineering with 5 years experience
3. Civil Engineer	Degree in Civil Engineering with 5 years experience.
4. Mechanical Engineer (Structural)	Degree in Mechanical Engineering/ B. Tech.

5. Mechanical Engineer (Maintenance)	Degree in Mechanical Engineering with 5 to 15 years experience.
6. Paper Technologist	M. Tech with experience.
7. Physician General	M.B.B.S with 5 years experience.
8. Bacteriologist	M.Sc/MBBS with suitable experience
9. Laboratory Asstt.	B.Sc with Chemistry with 5 years experience or M.Sc in Chemistry.
10. Planning Engineer	Degree in Engineering with suitable experience.

Emoluments:

3.6.1 The emoluments or scales of pay of employees mostly depend upon the size of establishments, its manufacturing activities and other related aspects such as qualification, experience and efficiency etc. Thus, the emoluments offered to employees in different occupational categories in paper industry not only differ from unit to unit but also differ within the same occupation depending upon the qualification and experience. Based on the information collected through the present survey, the average of minimum and maximum monthly emoluments offered to the employees in respect of a few reporting establishments irrespective of their size classes is summarised in the following table.

Table 14

Monthly emoluments of important occupations

Sl. No.	Occupation	Emoluments (in Rs.)	
		Minimum	Maximum
1.	Chemist (General)	400	1,200
2.	Electrical Engineer	500	1,500
3.	Mechanical Engineer (Structural)	700	1,800
4.	Mechanical Engineer (Maintenance)	700	1,000
5.	Civil Engineer	600	1,600
6.	Paper Technologist	700	2,000
7.	Physician General	700	1,500
8.	Manager (Marketing)	900	2,500
9.	Manager (Personnel)	800	2,750
10.	Legal Officer	900	1,800
11.	Industrial Chemist	500	1,200
12.	Industrial Engineer	600	1,800

3.6.2 The examination of the information regarding emoluments offered to the employees in paper industry reveals that there are more than 200 occupations. The details of salary range for some of the important occupations according to different size classes of establishments are indicated in Appendix-VII.

enues of motion:

3.7 Avenues of promotion are the incentives given to the employees by the establishment. In fact, the promotion from unskilled to semi-skilled and from semi-skilled to skilled persons in the establishment has a direct bearing on their efficiency which in turn accelerates production or output of a firm. The survey reveals that an industrial chemist may be promoted to the post of Production Manager and similarly, a Mechanical Engineer may get promotion to the post of Works Manager, Paper Technologist to the post of Factory Manager and Labour Officer to the post of Senior Labour Officer. The promotional pattern from lower categories of status to the higher status within the specific occupation is more or less identical in almost all the establishments covered in the present survey. The details of avenues of promotion for some important occupations are presented in Appendix-VIII.

plant Training ogrammes:

3.8 With the advancement in scientific and Technological know-how in industries and trades, paper industry in India has also influenced a lot. The paper industry, being a highly capital-intensive industry which is equipped with very huge plants and machineries having sophisticated instruments for various production processes, require to a greater extent, specialisation and training of personnel to handle the job accurately and efficiently. The importance of evolving a satisfactory practical attempt to train the personnel in the establishments are the essential prerequisites for bridging the

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gap between the requirements of a job and the capabilities of the persons holding the job. The paper industry needs various types of administrative, technical, managerial, skilled and unskilled workers. The information on inplant training programmes supplied by the responding establishments reveals that a large number of establishments had trained and/ or were training the personnel to handle various types of work in their establishments before giving them employment The proportion* of trainees who were absorbed in the establishments after successful training constituted 77.2 per cent of the total trainees as may be seen from Appendix-IX. Some trainees were also trained under the Apprentice Act, 1961 who were largely recruited through Employment Exchanges. The period of Training varied from 3 months to 3 years depending upon the nature and type of occupations. A statement showing the requisite qualifications prescribed for training in various occupations, sources of recruitment, duration of training is given in Appendix-IX.

npower
rtages:

3.9 In the developmental activities within the infrastructure of industry, manpower planning becomes a vital factor in formulating not only long term policies but in evolving short term measures to remove bottlenecks in economic growth arising out of lack of right type of manpower skills required. There are employers who hold the views that they do not get the right type of skills specially for the jobs in which highly talent and expertise is required. This gives stimulus shortages in certain groups of occupation. With a view to assessing the nature and extent of manpower

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* It could be seen in Appendix-IX.

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shortages, being felt by the employers, a detailed information regarding number of vacancies that could not be filled due to shortage of manpower, the period for which the vacancies remained unfilled and ultimately how the work was managed in the absence of the required skills was collected from the establishments covered under the present survey. The information on manpower shortages reveals that out of 165 vacancies of various occupations occured which were in short supply, 141 of these vacancies could not be filled due to non-availability of suitable candidates required to do the job. The vacancies remained unfilled from 6 months to 3 years and the work was managed in almost all the cases by the existing staff available in these units. The detailed information regarding manpower shortages in different occupations, as reported by establishments, is presented in Appendix-X

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Chapter - IV

EMPLOYMENT OUTLOOK

4.1 Manpower forecast is not only helpful to the industries and trades but is also conducive to the planners, training institutions, etc. to keep a proper balance between demand for and supply of the workers required in different occupations. To anticipate the future manpower requirements in paper industry, factors like growth rate of employment and replacement needs are to be considered. The information received from the establishments covered under the present survey on likely additional manpower requirement, expansion programme with regard to new units, expansion of existing units and modernisation of existing units as also to be seen and discussed.

Forecast of additional Manpower Requirement based on the growth of employment, as reported by the establishments:

4.2 As pointed out earlier, questionnaire were issued to 314 establishments engaged in paper industry. Of these establishments, 66 establishments were excluded owing to the reasons explained in para (1.4) while 177 establishments reported to the enquiry. The employment reported in these establishments was of the order of 61,123 as on December, 1973. It is observed from the data on employment that employment increased at an average growth rate of 4.56% per annum during the period 1969 to 1973. It is assumed that this annual growth rate continues in the near future. Presuming that the size of employment in future would also be influenced by the replacement needs i.e. retirement, death, etc. It is also assumed that 2% of the total positions would fall. Thus, 2% attrition factor also needs to be applied to get the forecast of employment of the paper industry.

The following table shows the future manpower requirements in paper industry by the end of 1979 and 1981.

Table 15
Manpower Requirement

Year	Estimated employment in the Reporting establishments	Additional Manpower Requirements	Additional Manpower Requirement due to attrition	Total Col (3) & (4)
1973	61,123 (Base) (27,195)	-	-	-
1976	69,871 (31,088)	8,748 (3,893)	3,836 (1,708)	12,584 (5,601)
1979	79,871 (35,538)	10,000 (4,450)	4,386 (1,952)	14,386 (6,402)
1981	87,321 (38,853)	17,450 (7,765)	7,653 (3,406)	25,103 (11,171)

It is observed from the above table that by the end of 1981 the total employment in responding and non-responding establishments, as estimated on the basis of growth rate and replacement needs, would be of the order of 87,321 and 38,853 respectively. Of this, the additional manpower requirement by the responding establishments would be of the order of 25,103 by the end of 1981 while in case of non-responding establishment, the additional manpower required would be of the order of 11,171 including unskilled, semi-skilled and skilled workers in the same year.

.3 With a view to studying the extent of expansion plans of the establishments in paper industry, the employers were asked to give their estimates separately for additional investment, production and employment. It is observed that about 30% of the responding establishments covered in the present survey indicated their future requirements. The details of statewise information on expansion plans.

N.B.: Figures in brackets show the estimate of employment in non-responding establishments which is worked out on the basis of average employment per unit of reporting units under Study.

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as reported by the establishment for three years (1974-76) and five years (1974-78), have been given in appendix-XI. The following table gives the indication of expansion plans, as reported by the establishments

Table - 16.

Details of Expansion Plans 1974-76 and 1974-78 (i.e. upto three years and five years) figures in laksh)

Sl. No.	Item	Establishment of new units	Expansion of existing units	Moderni-sation of existing units	Total
1.	2.	3.	4.	5.	6.
1.	ADDITIONAL INVESTMENT LIKELY TO BE MADE (Rs. in lakhs)				
	i) 3 years hence (74-76)	1169.50	6093.03	296.76	7559.29
	ii) 5 years hence (74-78)	2297.50	6939.98	297.76	9535.24
2.	ADDITIONAL OUTPUT PROPOSED TO BE MADE (Rs. in lakhs)				
	i) 3 years hence (74-76)	950.70	7067.89	631.25	8649.84
	ii) 5 years hence (74-78)	1060.30	10345.05	643.25	12048.60
3.	ADDITIONAL EMPLOYMENT ANTICIPATED TO BE GENERATED (Absolute figures)				
	i) 3 years hence (74-76)	713	2487	427	3627
	ii) 5 years hence (74-78)	975	3219	449	4643

The figures presented in the above table show that the additional investment during the three years (1974-76) and five years (1974-78) will be of the order of Rs.75.6 and Rs.95.4 crores respectively while the production in terms of value would of the order of Rs.86.5 and Rs.120.5 crores during the same period. The additional employment to be generated in these establishments would be 3,627 during (1974-76) and 4,643 during (1974-78).

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4.4 The occupationwise information collected from the establishments was sorted out in the first instance and then was grouped according to the broad occupational groups. Based on the information received from the responding establishments and also presuming that non-responding establishments might have more or less the same structure of employment in different occupations in forecast of manpower requirements made due to expansion and replacement needs in different occupational groups during the years (1976-79) and (1977-81) in paper industry is presented in the table below?

Table 17

FORECAST OF MANPOWER REQUIREMENTS DUE TO ATTRITION AND EXPANSION PLAN INCLUDING EMERGING UNITS.

Sl. No.	Occupational Dvn.	Description	Additional Manpower Requirements During 1976-79 Due to Attrition			During 1977-81 Due to Attrition		
			Due to Attrition	Due to Expansion	Total	Due to Attrition	Due to Expansion	Total
1.	2.	3.	4.	5.	6	7	8.	9.
1.	0-1	Professional, technical and related workers	262	613	875	463	1062	1525
2.	2	Administrative, Executive and Managerial Workers	65	130	195	105	230	335
3.	3	Clerical and related workers.	670	1500	2170	1155	2635	3790
4.	4	Sales Workers	15	35	50	25	60	85
5.	5	Service Workers	235	525	760	410	915	1325
6.	6	Farmers and related workers	15	35	50	25	60	85
7.	7,8& 9	Production and related workers, Transport equipment operators and labourers n.e.c.	5076	11612	16688	8876	20253	29129
		Total:	6338	14450	20788	11059	25215	36274

The table shows that the total manpower requirement in paper industry would be 20,788 and 36,274 (all types of worker) during the periods (1976-79) and (1977-81) respectively. Of the total future manpower requirements, about 80% Craftsmen and production process workers would be required during both the periods under study. The details of additional manpower requirements by occupations have been given in Appendix-XII.

Sectorwise Manpower Requirements:

4.5 The future manpower requirement during the periods (1976-79) and (1976-81), analysed on the basis of public and private sector establishments, is presented in the following table:

Table 18

Sectoral growth of Employment

Sector	Additional requirements of manpower Three Years (1976-79)	 Five Years (1976-81)
Public Sector	4,250 (20.44)	7,420 (20.46)
Private Sector	16,538 (79.56)	28,854 (79.54)
TOTAL:	20,788	36,274

The survey reveals that the private sector will need about 80 per cent of the total requirements whereas the rest 20 per cent of manpower will be utilised by the public sector.

Forecast of Additional Manpower Requirements made by the Planning Commission:

4.6 For achieving the targets of additional capacity and production of paper and paper boards amounting to 1.37 millions ....

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tonnes, newsprint to 164,000 tonnes, rayon grade pulp to 100,000 tonnes and paper grade pulp to 180,000 tonnes, the additional employment potential by the end of Fifth Plan as envisaged by the Planning Commission would be of the order of 115,000 of which 80,000 workers are estimated to be required in the forest sector to work for making raw materials, etc. available to the paper mills and factories. The following table gives the occupation wise estimated of manpower requirements, as worked out by the Planning Commission.

Table 19
Employment Potential and Technical Manpower Resources*

Sl. No.	Description	Additional Employment Potential
A.	Technical Staff	
1.	Chemical Engineer	900
2.	Mechanical Engineer	900
3.	Diploma holders & Draughtsmen	700
4.	Electrical Engineer	240
5.	Instrument Engineers	120
6.	Civil Engineers	100
7.	Diploma Holders	100
8.	Paper Technology diploma holders	700
9.	Steno-typist and clerks	800
B.	Administration Staff	
10.	Accounts & Audit	800
11.	Sales and Paper Godown	400
12.	Purchase and Stores	600
13.	Personnel Department	800
14.	Forest Department	400

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15. Transport	200
16. Security and Fire Service	500
C. Workers	
17. Skilled	7,000
18. Semi-skilled	12,000
19. Unskilled	16,000
20. Forest	80,000
Total:	1,15,000

It is observed from the above table that to meet the additional capacity and production of paper, 115,000 additional manpower would be required by the end of Fifth Plan. Of the total additional manpower requirements, the skilled, semi-skilled and unskilled workers would be about 35,000.

4.7 The Planning Commission, in their estimates of manpower potential (i.e. 115,000), has also taken into account the 80,000 workers to be required in the subsidiary industries i.e. Forest etc. whereas this survey has not included the labour force presently employed in subsidiary industries. If we exclude the manpower potential to be required in forest sector as worked out by the Planning Commission, the remaining 35,000 skilled, semi-skilled and unskilled workers required by the industry would more or less tally with the estimates worked out in the present survey.

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* SOURCE: Report of the Task Force for Pulp, Paper and Allied industries, Government of India, Planning Commission, 1973, P.P. 60 to 61.

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Chapter-V

Summary of Findings and Conclusions

5.1 The present report on employment pattern in paper industry is the fifth in the series of the industry survey reports brought out so far by the Directorate General of Employment & Training. In the main, the objective of these industry surveys is to see the present employment and study the manpower shortages and also assess the future manpower requirements of such industries as are vital from the point of view of development and employment creation The paper industry has been characterised as an important industry from the point of view of development and employment creation. The survey is also useful from the point of view of rendering vocational guidance and career counselling to the youths into the productive channel of employment

(Paras 1.1, 1.2 and 1.3)

5.2 In all 314 establishments engaged in paper manufacture and paper product were asked to furnish information in the questionnaires mailed to them. Of these establishments, 66 units were excluded owing to the reasons given in para (1.4) and, thus, of the remaining 248 establishments which were, in fact covered., only 177 Units responded to our enquiry; the response being 71%. (Para 1.4)

5.3 The scrutiny of data furnished by the establishments covered under the present survey reveals that as many as 43 establishments were functioning till the end of 1950. It is noticed that from 1951 to 1973 about 76% of the total units engaged in paper manufacture and paper product were established

(para 2.2)

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5.4 The information collected on the basis of nature of products manufactured in the establishments shows that about 34% of the total units were engaged in the manufacture of writing, printing and white paper including industrial paper such as wrapping and packaging paper and paper mill board while the remaining units (or about 60%) were engaged in the paper products like carbonising tissue, filter paper, cigarette tissue, etc.

(Para 2.3)

5.5 Paper industry is classified as one of the most highly capital-intensive industry. The survey reveals that the investment made by the reporting units increased from 162.17 crores in 1969 to 224.44 crores in 1973, recording an increase of about 30% over the period.

(Para 2.5)

5.6 The value of production in the paper industry increased from Rs.109.17 crores in 1969 to Rs.179.62 crores in 1973.

(Para 2.7)

5.7 The employment in paper industry increased from 51,26 in 1969 to 61,123 in 1973, showing an annual average growth of about 4.56%. The analysis of data further shows that the share of women employees was more or less same during 1969 and 1973. The sectorwise break-up of employment shows that the bulk of employment in 1969 and 1973 was in private sector establishments.

(Paras 2.10, 2.11, 2.12, & 2.13)

5.8 The occupational analysis reveals that the Craftsman an production process workers constituted about 80% of the total employment in the Manufacture of Paper and Paper Products and rest 20% were in other occupational divisions. The most important occupations figured in the survey

survey were Chemist (General), Electrical Engineer, Civil Engineer, Mechanical Engineer, Physician General, etc. Scales of pay, as reported by the establishment, are also lucrative Generally, promotional channel in case of other occupations in the paper industry also exists.

(Paras 3.2, 33, 3.4, 3.6.1 & 3.7)

5.9 The information on training programme in the establishments supplied to the enquiry reveals that about 77 per cent of the total trainees trained in the reporting establishments were absorbed in these units after their successful completion of training, Training was also imparted to the trainees under the Apprenticeship Act, 1961. Some employers also reported shortage of some occupations. Out of 165 vacancies which were in short supply 141 vacancies could not be filled due to non-availability of suitable candidates and the work was managed by the existing staff.

(Paras 3.8 & 3.9)

5.10 In the absence of complete information from the units on future manpower requirements, it was thought necessary to estimate additional manpower requirement on the basis of annual growth rate of employment. It is estimated that by the end of 1981 the total volume of employment in paper industry would be of the order of 1,26,174 of which the additional manpower required by the end of 1979 would be of the order of 20,788 while by the end of 1981 the additional manpower required would be of the order of 36,274. The occupational break up of such information shows, that of all the manpower requirements about 80% craftsmen and production process workers would be needed by the paper industry during the periods (1977-79) and (1977-81). Further, the sectoral analysis of manpower estimates shows that about 80% of the total manpower would be required by the private sector establishments during both the periods (1977-79) and (1977-81)

(Paras 4.2, 4.4 & 4.5)

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APPENDIX -I

FORM DGET-IS/I

GOVERNMENT OF INDIA
Ministry of Labour
DEPARTMENT OF LABOUR AND EMPLOYMENT
(DGE&T)

(Information received will be treated in strict confidence and used only for research purposes in a manner that will not permit identification of the respondenct)

N.B : Please consult the enclosed Manual before filling in the particulars

INDUSTRY ____________________

1. Identification Data

Name:

2. Address:

3. Year of establishment:

4. Public Sector/Private Sector

5. Branch/Head Office

6. Registered factory/Unregistered

7. Officer to be contacted for clarifications

a) Name:

b) Telephone No.

8. Products:

9. Different stages of production processes:

II CAPITAL, PRODUCTION AND EMPLOYMENT

Item	Unit	As on 31st December				
		1969 1971	1970 1972	1971 1973	1972	1973
1. Capital (Total)	(Rs)					
(i) Fixed	(Rs.)					
(ii) Working	(Rs.)					
2. Production (in the year ending)	(Rs.)					
3. Employment	(No.)					
Regular (*)	(No.)					
Casual	(No.)					

(*) Including unskilled workers as well as proprietors, owners, working partners, etc. Daily-rated and piece rated workers are also to be included

III OCCUPATIONAL DATA

Qualifications, emoluments and promotion channels.

Sl. No.	Occupation (Describe job contedn.)	N.C.O (need not be filled by the establishment)	No. Employed as on 31st December						Minimum entry qualifications prescribed/ expected.		
			1969			1973					
			Men	Women	Total	Men	Women	Total	Academic	Professional/ Technical	Others : experience etc.
1	2	3	4	5	6	7	8	9	10	11	12

from pre-page.

Sl.No.	Salary ranges (Total) consolidated per month (Rs.)		Other benefits	Method of recruitment	Occupation to which next promotion is possible.	Normal period required for promotion
	Minimum	Maximum				

IV MANPOWER SHORTAGES

Please mention below the skills required which are in short supply

Sl. No.	Occupation/ skill	No. of vacancies that occured during the year ended 31st Dec...........	No. that could not be filled due to shortage of suitable persons.	Period for which the vacancies are unfilled	How the work was managed without these skills.	Remarks (suggestions etc.)
1	2	3	4	5	6	7

V TRAINING PROGRAMMES IN THE ESTABLISHMENT

No.	Occupation	N.C.O. (Not to be filled by the establishment.)	No. of trainees as on ______	Minimum qualifications for entering the programme.	Duration of the course.	How recruited for training.	No. of trainees absorbed or likely to be absorbed in the establishment.
1	2	3	4	5	6	7	8

VI ANCILLARY/AUXILIARY INDUSTRIES

Description of operations/ semi-finished or finished products purchased item of ancillaries.	Name and address of the ancillary/ auxiliary units.	Value of such services/pro- ducts supplied by the units.	Employment in the ancillary/auxiliary units, if known.	Is the unit solely working for them or not.
1	2	3	4	5

VII (a) EXPANSION PLANS

Nature of expansion.	Additional investment		Additional output		Additional Employment (Nos.)	
	During next three years	During next five years	three years hence	five years hence	three years hence	five years hence
1	2	3	4	5	6	7
1. New Units						
2. Expansion in the existing unit.						
3. Modernisation of the existing unit.						

Problems (faced in regard to the above expansion programme)

VII (b) ADDITIONAL MANPOWER NEEDS IN DIFFERENT CATEGORIES

Sl. No.	Occupation	N.C.O. (not to be filled by the establishment)	No. of additional persons required at different stages of expansion	
			Three years hence	Five years hence
1	2	3	4	5

VII (b) ADDITIONAL MANPOWER NEEDS IN DIFFERENT CATEGORIES (Contd. from pre-page)

APPENDIX-II

Degree of Response in paper industry.

S.No.	State/Union Territory.	No. of Estts. Addressed	No. of Estts. Excluded	Balance	No. of Estts. Responded	C/O age responce
1	2	3	4	5	6	7
1.	Andhra Pardesh	9	3	6	5	83.53
2.	Bihar	2	-	2	-	-
3.	Delhi	31	6	25	14	56.00
4.	Gujarat	20	2	18	14	77.78
5.	Haryana	4	-	24	1	25.00
6.	Karnatka	14	3	11	11	100.00
7.	Kerala	2	-	2	1	50.00
8.	Madhya Pardesh	10	-	10	8	80.00
9.	Maharashtra	105	30	75	56	74.67
10.	Orissa	3	-	3	3	100.00
11.	Punjab	2	-	2	2	100.00
12.	Rajasthan	3	-	3	3	100.00
13.	Tamilnadu	36	7	29	21	72.41
14.	Uttar Pardesh	17	4	13	13	100.00
15.	West Bengal	56	11	45	25	55.56
		314	66	248	177	71.37

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APPENDIX-III

Paper Industry Investment

(Rupees in Lakhs)

Sl. No.	State/Union Territory.	1969	1970	1971	1972	1973	%age increase 1973/1969
1.	2.	3.	4.	5.	6.	7.	8.
1.	Andhra Pradesh	2172.81	2437.55	2606.90	2865.55	3143.58	(+) 44.68
2.	Delhi	30.30	30.16	32.97	33.02	30.92	(+) 2.05
3.	Gujarat	1275.66	1382.23	1427.86	1551.53	1622.41	(+) 27.18
4.	Haryana	119.13	160.66	193.24	227.22	286.60	(+) 140.58
5.	Karnatka	1988.34	2141.11	2351.27	3300.55	3622.08	(+) 82.17
6.	Kerala	90.52	114.28	171.25	263.00	365.08	(+) 303.31
7.	Madhya Pradesh	1245.74	1269.65	1266.18	1304.50	1300.[illegible]2	(+) 5.03
8.	Maharashtra	1854.94	1983.77	2140.40	2415.29	2581.93	(+) 39.19
9.	Orissa	2033.15	2039.55	2484.81	2755.97	3075.88	(+) 51.27
10.	Punjab	6.24	6.55	7.17	6.99	6.30	(+) 0.96
11.	Rajasthan	1.31	2.00	2.45	2.92	26.64	(+) 1933.59
12.	Tamil Nadu	2410.11	2374.50	2618.58	2815.66	2921.42	(+) 21.22
13.	Uttar Pradesh	651.27	702.69	652.63	738.59	810.42	(+) 724.44
14.	West Bengal	2337.90	2352.52	2439.73	2614.09	2643.19	(+) 13.06
	TOTAL	16217.62	17002.22	18395.44	20974.89	22444.87	(+) 38.40
			+ 4.84	+ 8.19	+ 14.02	+ 7.02	

APPENDIX IV

PRODUCTION

(Rupees in lakhs)

S.No.	State/Union Territory	1969	1970	1971	1972	1973	%age increase 1973/1969
1.	2.	3.	4.	5.	6.	7.	8.
1.	Andhra Pradesh	1054.17	1190.19	1683.14	1979.90	1978.38	(+) 87.67
2.	Delhi	57.11	54.89	56.77	57.26	57.55	(+) 0.77
3.	Gujarat	490.80	672.21	723.30	889.61	928.28	(+) 89.14
4.	Haryana	102.42	159.78	212.69	30[illegible].93	378.82	(+) 269.86
5.	Karnatka	879.62	1064.44	1178.27	1392.78	2068.81	(+) 135.19
6.	Kerala	N.A.	N.A.	N.A.	N.A.	N.A.	
7.	Madhya Pradesh	1722.06	1904.06	2046.51	2150.31	2366.39	(+) 37.42
8.	Maharashtra	2271.30	2504.69	2863.89	3539.89	3928.20	(+) 72.51
9.	Orissa	1205.15	1290.23	1379.59	1347.83	1566.42	(+) 29.98
10.	Punjab	7.38	7.88	7.88	9.97	5.43	(-) 26.42
11.	Rajasthan	2.32	2.79	4.13	3.92	13.46	(+) 480.17
12.	Tamil Nadu	987.32	1247.12	1380.70	1688.87	1985.82	(+) 101.13
13.	Uttar Pradesh	540.44	608.17	732.62	796.59	729.88	(+) 35.05
14.	West Bengal	1597.00	1733.97	1840.39	2093.19	1965.06	(+) 23.05
	TOTAL	10917.09	12440.48	14109.88	16252.05	17962.50	(+) 64.54
			(+) 13.95	(+) 13.42	(+)15.18	(+)10.52	

APPENDIX-V

EMPLOYMENT

S.No.	State/Union Territory	1969	1970	1971	1972	1973	C/o age increase 1973/1969.
1.	Andhra Pradesh	5362	5448	5805	6881	6544 (10.71)	22.04
2.	Delhi	177	174	180	179	186 (0.30)	5.08
3.	Gujarat	2938	3151	3240	3318	3210 (5.25)	9.26
4.	Haryana	793	803	903	908	922 (1.51)	16.27
5.	Karnatka	5530	5609	5735	6936	7498 (12.26)	35.59
6.	Kerala	1020	1083	1163	1165	1142 (1.87)	11.96
7.	Madhya Pradesh	3691	4449	4544	4612	4688 (7.67)	27.01
8.	Maharashtra	6535	6715	7083	7965	8432 (13.80)	29.03
9.	Orissa	7414	7529	7761	7733	7856 (12.85)	5.96
10.	Punjab	61	87	75	65	56 (0.09)	(-) 8.20
11.	Rajasthan	20	20	20	20	156 (0.26)	680.00
12.	Tamilnadu	4697	4833	5083	5266	5349 (8.75)	13.88
13.	Uttar Pradesh	2871	3100	3200	3132	3215 (5.26)	11.98
14.	West Bengal	10160	11585	11924	11561	11869 (19.42)	16.82
	TOTAL	51269	54586	56716	59241	61123 (100.00)	19.22
		19.22	+6.47	+3.90	+4.45	+3.18	

APPENDIX VI

OCCUPATIONAL DISTRIBUTION OF EMPLOYEES IN PAPER AND PAPER PRODUCT INDUSTRY

Sl. No.	N.C.O.	Occupation	Number of employees as on 31st DEC						% of total to Grand total	
			Men	Women	Total	Men	Woemn	Total	1969	1973
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1.	001.60	Chemist, Industrial	388	4	392	490	4	474	0.76	0.81
2.	010.30	Laboratory Assistant, Chemical	62	2	64	76	2	78	0.13	0.13
3.	021.10	Civil Engineer, General	10	-	10	13	-	13	0.02	0.02
4.	022.10	Electrical Engineer, General	178	-	178	203	-	203	0.35	0.33
5.	023.10	Mechanical Engineer, General	360	-	360	436	-	436	0.70	0.71
6.	024.10	Chemical Engineer, General	187	-	187	207	-	207	0.37	0.34
7.	027.90	Industrial Engineers, Other	51	-	51	54	-	54	0.10	0.09
8.	029.15	Instrument Engineer	15	-	15	14	-	14	0.03	0.02
9.	019.30	Jute Technologist	4	-	4	6	-	6	0.01	0.01
10.	022.73	Paper Technologist	58	-	58	95	-	95	0.11	0.16
11.	030.20	Draughtsman, Civil	33	-	33	42	-	42	0.06	0.07
12.	030.40	Draughtsman, Mechanical	94	-	94	113	-	113	0.18	0.19
13.	031.10	Overseer, Civil Engineering	50	-	50	64	-	64	0.10	0.11
14.	032.10	Technician, Electrical Engg.	15	-	15	45	-	45	0.03	0.07
15.	039.20	Tracer	24	-	24	14	-	14	0.05	0.02
16.	039.30	Blue Printer	1	-	1	1	-	1	-	-
17.	053.20	Horticulturist	1	-	1	3	-	3	-	0.01
18.	070.10	Physician, General	10	3	13	14	3	17	0.03	0.03
19.	076.20	Pharmacist	39	1	40	45	1	46	0.08	0.08
20.	080.30	Dresser	10	1	11	11	1	12	0.02	0.02
21.	084.30	Nurse, Industrial	23	30	53	27	38	65	0.10	0.11
22.	089.20	Midwifery Attendant	15	-	15	21	-	21	0.03	0.03
23.	089.30	Sanitary Inspector	11	-	11	17	-	17	0.02	0.03
24.	120.10	Accountant	298	-	298	369	-	369	0.58	0.60
25.	136.10	Personnel Manager	76	-	76	87	-	87	0.15	0.14
26.	137.10	Labour Welfare Officer	34	-	34	39	-	39	0.07	0.06
27.	142.10	Legal Assistant	2	-	2	2	-	2	-	-
28.	169.50	Public Relations Officer	6	-	6	9	-	9	0.01	0.01
	0 & 1	Professional Technical & Related workers	2055	41	2096	2517	49	2566	4.09	4.20

APPENDIX-VI (Contd).

(1)	(2)	(3)	(4)	(5)	(6)		(8)	(9)	(10)	(11)
29.	220.30	Manager, Wholesale Trade	5	-	5	5		5	0.01	0.01
30.	243.10	Working Proprietor, Manufacturers	467	6	473	523	5	528	[illegible]	0.85
31.	260.30	Manager, Lodging & Catering Services	3	-	3	5	-	5	0.01	0.01
	2	Administrative Executive and Managerial workers	475	6	481	533	5	538	0.94	0.88
32.	300.10	Office I/c	120	-	120	117	-	117	0.23	0.19
33.	302.10	Office Assistant	309	8	317	348	5	353	0.62	0.58
34.	320.20	Stenographer	503	28	540	630	28	658	1.05	1.08
35.	323.10	Key Punch Operator	6	-	6	6	-	5	0.01	0.01
36.	330.20	Accounts Clerk	82	1	83	121	1	122	0.16	0.20
37.	331.10	Cashier General	63	-	63	77	-	77	0.12	0.13
38.	340.10	Computor	27	-	27	31	-	31	0.05	0.05
39.	350.10	Clerk, General	2635	40	2675	3260	44	3304	5.22	5.41
40.	351.10	Store-keeper	406	1	407	414	1	415	0.79	0.68
41.	352.10	Receptionist (Hotel)	5	3	8	6	3	9	0.02	0.01
42.	358.90	Unskilled Office Workers, Other	1105	1	1106	1192	2	1194	2.16	1.96
43.	359.90	Transport Communications Superisor	8	-	8	8	-	8	0.02	0.01
	3	Other Clerical & Related workers	5268	92	5360	6209	[illegible]	6293	10.45	10.30
44.	411.20	Purchasing Agent	36	-	36	40	-	40	0.07	0.07
45.	420.10	Sales Representative, Technical	86	-	86	101	-	101	0.17	0.16
	4	Sales workers	122	-	122	141	-	141	0.24	0.22
46.	522.90	Bartenders	56	-	56	83	-	83	0.11	0.14
47.	541.10	Sweeper	434	37	471	515	48	563	0.92	0.92
48.	570.20	Fire Officer	144	-	144	193	-	193	0.28	0.32
49.	573.10	Security Officer/Watchman/Guard	1197	-	1197	1360	-	1360	2.33	2.22
	5	Service workers	1831	37	1868	2151	48	2199	3.64	3.60
50.	650.10	Forester	66		66	199	-	199	0.13	0.33
	6	Farmers, Fishermen, Hunters, Loggers and Related workers	66		66	199	-	199	0.13	0.33

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APPENDIX-VI (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
51.	713.10	Driller, Machine	40	-	40	39	-	39	0.08	0.06
52.	715.50	Loco Driver, Mines	8	-	8	8	-	8	0.02	0.01
53.	715.65	Stowing, Mistry	101	-	101	101	-	101	0.20	0.17
54.	718.90	Mineral Treating Operatives	65	-	65	69	-	69	0.13	0.11
55.	720.50	Supervisor & Foreman, Metal Drawing & Extruding	124	-	[illegible]	98	-	98	0.24	0.16
56.	721.30	Mixerman	72	-	72	95	-	95	0.14	0.16
57.	721.40	Convertorman	70	-	70	60	-	60	0.14	0.10
58.	721.90	Furnace Operatives	30	-	30	29	-	29	0.06	0.05
59.	722.90	Rolling Mill Operatives	92	-	92	91	-	91	0.18	0.15
60.	725.10	Moulder, General	91	-	91	99	-	99	0.18	0.16
61.	725.60	Core maker, Machine	40	-	40	41	-	41	0.08	0.07
62.	727.90	Metal drawing operatives	264	4	268	289	5	294	0.52	0.48
63.	730.20	Supervisor & Foreman, Paper Pulp and Paper making	3876	28	3904	4461	60	4521	7.61	7.40
64.	732.35	Cylinderical saw operator	2	-	2	2	-	2	-	-
65.	732.40	Cross cut saw operator	10	-	10	7	-	7	0.02	0.01
66.	733.10	Chipperman, Paper pulp	1923	-	1923	2306	1	2307	3.75	3.77
67.	733.15	Grinder, Paper pulp	125	-	125	146	-	146	0.24	0.24
68.	733.20	Digestor Operator, Paper Pulp	120	-	120	143	-	143	0.23	0.23
69.	733.25	Sorter, Paper pulp	59	154	213	56	132	188	0.42	0.31
70.	733.40	Valve operator, Paper pulp	37	4	41	40	4	44	0.08	0.07
71.	733.45	Caustioman, Paper pulp	22	-	22	26	-	26	0.04	0.04
72.	733.60	Bleacher, Paper pulp	48	-	48	96	-	96	0.09	0.16
73.	733.65	Beaterman, Paper pulp	421	-	421	430	-	430	0.82	0.70
74.	733.90	Paper pulp preparers, other	632	7	639	740	7	747	1.25	1.22
75.	734.20	Wireboy, Paper	322	-	322	422	-	422	0.63	0.69
76.	734.35	Finisher, Paper	1070	29	1099	1175	28	1203	2.14	1.97
77.	734.40	Vatman, Hand made paper	597	-	597	608	-	608	1.16	1.00
78.	734.55	Drier, Hand made paper	226	-	226	208	-	208	0.44	0.34
79.	734.65	Calenderman, Paper	54	2	56	82	3	85	0.11	0.14
80.	734.[illegible]	Paper [illegible] operatives	1058	-	1058	1262	-	1262	2.06	2.06
81.	741.[illegible]	Miller	16	-	16	18	-	18	0.03	0.03
82.	741.[illegible]	[illegible] machinemen attendant(Chemical)	98	-	98	89	-	89	0.19	0.15
83.	742.[illegible]	[illegible], Chemical	88	-	88	75	-	75	0.17	0.12
84.	749.[illegible]	Chemical & related process workers,	183	-	183	213	-	213	0.36	0.35

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
85.	752.70	Winder	35	-	35	42	-	42	0.07	0.07
86.	758.30	Printing Gobber	3	-	3	3	-	3	0.01	0.01
87.	811.10	Carpenter, General	21	-	21	21	-	21	0.04	0.03
88.	813.30	Rouler, wood.	39	28	67	29	28	57	0.13	0.09
89.	831.10	Blacksmith	144	-	144	158	-	158	0.28	0.26
90.	831.40	Hammerman	24	-	24	27	-	27	0.05	0.04
91.	832.10	Marker, Metal	50	-	50	63	2	65	0.10	0.11
92.	833.90	Tool makers, other	8	-	8	7	-	7	0.02	0.01
93.	835.10	Machinist, General	108	-	108	135	-	135	0.21	0.22
94.	835.15	Turner	285	-	285	335	-	335	0.56	0.63
95.	835.25	Shaper	17	-	17	24	I	25	0.03	0.04
96.	835.30	Planer	8	-	8	8	-	8	0.02	0.01
97.	836.30	Thread Grinder	57	-	57	56	-	56	0.11	0.09
98.	840.10	Supervisor & Foreman, Machinery Fitting & repairing	85	-	85	120	-	120	0.16	0.20
99.	841.20	Mechanic Precision Instrument, Mech.	114	-	114	135	-	135	0.22	0.22
100.	842.20	Assembler workshop machines and Equipment	2557	81	2638	2752	66	2818	5.15	4.61
101	843.30	Mechanic Automobile	393	-	393	417	-	417	0.77	0.68
102.	845.70	Fitter, Signal	56	-	56	64	-	64	0.11	0.10
103.	851.10	Electrician, General	595	-	595	649	-	649	1.16	1.06
104.	855.10	Wireman, Light & Power	183	-	183	211	-	211	0.36	0.35
105.	856.90	Telephone & Telegraph Installing and Repairing Operatives	44	-	44	42	-	42	0.09	0.07
106.	859.50	Armature, winder	124	-	124	161	-	161	0.24	0.26
107.	871.10	Plumbers, General	111	-	111	137	-	137	0.22	0.22
108.	872.10	Welders	274	-	274	309	-	309	0.53	0.51
109.	873.50	Tinsmith	44	-	44	48	-	48	0.09	0.08
110.	910.10	Supervisor & Foreman, Paper & Paper Board Product making	603	-	603	710	-	710	1.18	1.16
111.	919.90	Paper & Paper Product Makers n.e.c.	183	14	197	189	12	201	0.38	0.33
112.	920.30	Roller Maker	11	-	11	14	-	14	0.02	0.02
113.	962.20	Boiler Attendant	503	28	531	574	47	621	1.04	1.03
114.	969.10	Breaker Tender	19	-	19	30	-	30	0.04	0.05
115.	973.90	Crane & Hoist Operatives	99	-	99	92	-	92	0.19	0.15
116.	975.40	Weigher	1	-	1	1	2	3	-	0.01
117.	979.10	Tractor Driver, Construction	11	-	11	11	-	11	0.02	0.02

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
118.	979.30	Liftman	5	-	5	6	-	6	0.01	0.01
119.	983.60	Driver Truck	521	-	521	773	-	773	1.03	1.26
120.	999.99	Skilled & Unskilled workers	21,388	180	21,568	26,478	286	26,764	42.07	43.79
	7,8 & 9	Tot	40,717	559	41,276	48,503	684	49,187	80.51	80.47
		GRAND-TOTAL	50,534	735	51,269	60,253	870	61,123	100.00	100.00

APPENDIX-VII

MINIMUM ENTRY QUALIFICATION IN SERVICE

Occupations (1)	N.C.O. No. (2)	1 - 9 (3)	10 - 24 (4)	25 - 99 (5)	100 - 499 (6)	500 and above (7)
1. General Chemist	001.10	-	B.Sc. Chemistry with one year experience.	-	B.Sc. (Chemistry) with 3 years experience	1. B.Sc. (Chemistry) 2. M.Sc (Inorganic) with 12 yrs experience 3. Degree in Chemistry, Engg. a 5 to 10 yrs. exp.
2. Junior Chemist Industrial	001.60	-	-	-	-	B.Sc., M.Sc. in Chemistry with 5 yrs. experience.
3. Laboratory Asstt.	010.30		-	-	B.Sc.	
4. Electrical Engineer	022.10 (022.30)	-	-	-	B.Engg. with 4-10 yrs. exp.	Degree in Electrical Engineerin with 5 yrs. exp.
5. Mechanical Engineer Structural	023.10	Degree in Mech. Engg. Indian or Foreign Exp.	-	B. Engg. Mech., 5-10 yrs. exp.	Degree of B.E. with 5 to 10 yrs. exp.	B.Engg. in Mech. Engg./B.Tech.
6. Mechanical Engineer Maintenance	023.35	-	-	-	-	Degree in Mechanical Engineeri with 5-15 years experience
7. Planning Engineer	027.20	-	-	-	Graduation in Engineering	Graduation in Engineering with 10 years experience
8. Paper Technologist	022.73	-	-	-	Post Graduate with long.exp.	M. Technology and with good experience
9. Draughtsman	030.40	-	-	-	Metric with ITI Certificate/diploma	Metric and I.T.I. Certificate with 5 to 10 yrs. experience.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
10. Laboratory Assistant	034.10	-	-	-	-	Matric with Science subject and having experience in Laboratory
11. Shipping Assistant	043.20	-	-	-	Matric with some experience	-
12. Bacteriologist	051.20	-	-	-	-	M.B.B.S., M.Sc. with 5 yrs. exp in the line
13. Horticulturist	053.20	-	-	-	-	S.S.L.C., B.A. Diploma in Trade with 5 years 'experience
14. Doctor	070.90	-	-	-	-	M.B.B.S. with 5 years experienc
15. Compounder	076.20	-	-	-	Matric, Diploma in First-aid	Matric, Diploma in First-aid
16. Nurse	084.30	-	-	-	Matric and Diploma in Nursing	Matric and diploma in Nursing
17. Accountant/ Cost Accountant	120.10	-	-	B.Com, Diploma in Business management	Graduation or post-graduation in Commerce and alongwith C.A. or I.C.W.A., 5-10 years exp.	Graduation or Post-Graduation in Commerce/Diploma or Degree in Chartered Accountancy or A.I.C.W.A. or Degree/Diploma i Business Management with 5-10 yrs. experience.
18. Accountants/ Auditors	120.90	B.Com/M.Com Diploma in Accountancy with some experience	B.Com/ M.Com or Diploma in Accountancy	Intermediate with some exp.	B.Com/Diploma in Business Management	B.Com/Diploma in Business Management with 2-5 years experience

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sr. Artist	171.10	-	Matric/Intermediate, Diploma in Arts	-	Matric/Intermediate alongwith Diploma in Arts	As in cloumn 6
Cinematographer	172.10	-	-	-	Matric/Inter, Diploma in Art	Inter and Diploma in Arts with 2-5 years experience
Laboratory Attendent	199.70	-	-	-		Literate with 2 yrs. exp.
Administrative Officer	219.90	-	-	-	Graduate/Post-Graduate with 10-15 yrs. exp.	
Sales Executive/Sales Officer	220.30	-	-	-	Graduate and diploma in Business Management and Marketing	Degree holder/diploma in Business Management and Marketing with 5-7 yrs. experience.
Director, Manufacturing	243.20	-	-	-	Degree holder in Engg. with vast knowledge and exp.	As in column 6
Manager, Manufacturing	243.30	Degree holder, long experience	Degree in Mech. or Chem. Engg.	B.E. (Chemical), 5 yrs. exp	Degree holder in Chemical Engg. with 5-10 yrs. exp.	1. Degree holder in Chem. Engg. 2. Post-graduate in Science & Diploma in Ptg. & Pugg 3. 5-10 yrs. exp.
Planning Officer/Personnel Officer	259.90	-	-	-	Graduate/B.Sc./B.Com/LL.B/I.C.W.A.	1. Graduate, M.A. , M.Sc. 2. M.Com. 3. 5-10 years experience
Administrative Officer	299.99	-	-	-	-	Post graduate/Graduate/B.A., LL.B, 5-10 yrs. exp.

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(1)	(2)	(3)	(4)	(5)	(6)	(7)
Accountant Asstt.	302.10	-	-	-	B.Com/Diploma in Accountancy and Business Management	B.Com/M.Com, Diploma in Business Management, 5-7 years experience
Stenographers	320.10	-	Graduate Good speed in Typing and shorthand	As in Col.4	1. Graduate 2. Accuracy in typing and shorthand 3. 3 yrs. exp.	As in col. 6
Key Punch Operator	323.10	-	-	-	1. S.S.L.C. 2. Diploma in Key Punching 3. Operator	1. S.S.L.C. 2. Diploma in Key Punch Operating 3. 3 years experience
Accounts Clerk	330.20	-	-	Graduation in Commerce with some experience.	1. Matric/ Graduate 2. 5-10 yrs. exp.	As in column 6.
Cashier	331.10	-	-	Gradution in Commerce and with some experience	Graduate/ knowledge of Cash-Management, 5 yrs. experience	As in column 6
Comptist	340.10		-	-	-	1. Matric 2. Diploma Holder 3. I.T.I. Certificate
Clerks	350.10	S.S.L.C with some exp./knowledge of Typing or Stenography	Matric/ Graduate	- -	Intermediate/ B.Com with some experience	1. Intermediate 2. B.Com

1	2	3	4	5	6	7
35. Superintendent S.t.	351.10	-	-	S.S.L.C./ Intermediate/ Graduate	As in Column 5	SSLC, Intermediate, Graduate with some experience
36. Telephone Operator	352.10	-	-	-	.Diploma Holder with some exp.	Graduate, Good Knowledge of English speaking.
37. Time-Keeper.	354.10	-	-	-	Matric with 1-2 yrs.exp.	Graduate with 5 years experience
38. **Transport Foreman**	**369.90**	-	-	-	Matric/Ex-servicemen personnel, 5 yrs.exp.	As in Col. (6)
39. **Purchase Manager**	111.20	-	-	-	B.Com.B.Sc. or M.Sc./M.Com/M.A. Diploma in Business Management	M.A. or C.Com, MA,LL.B Diploma or Degree in Business Management.
40. **Sales Representative.**	420.10	-	-	**Matric**	B.Com	B.Com, Diploma in Business Management & Marketing
41. **Fire Officers**	570.30	-	-	-	8th Standard Fire Certificate	S.S.L.C./Intermediate/ B.Sc., 5 yrs. exp.
42. **Security Officer**	573.10	-	-	Matric/Ex-Servicemen Personnel	Intermediate/ Graduate Ex-servicemen with some experience	1. Intermediate/Graduate 2. Ex-servicemen Personnel 3. 5-10 yrs. exp.
43. Forest-Supervisor.	660.10	-	-	-	1. Matric 2. Ex-servicemen Personnel	As in Col.(6)

APPENDIX-VII (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
44. Driller	713.10	-	-	-	Matric, I.T.I. Certificate	Matric, I.T.I. Certificate, 3-5 yrs. experience.
45. Loco Driver	715.50	-	-	-	Below Matric with some experience	Certificate or Diploma in Loco Driving with some experience
46. Box Maker	715.65	-	-	SSLC with some experience	SSLC , 5-7 years experience	SSLC, 5-7 years experience
47. Supervisor	720.50	-	-	Matric/Intermediate	Intermediate Graduate, Ex servicemen Personnel with some exp.	Intermediate/Graduate Ex-servicemen Personnel with 2-5 years exp.
48. Powder Maker/ Mixer	721.30	-	-	Literate 2-3 yrs. exp.	Literate 2-3 yrs. exp.	Literate 2-4 yrs. exp.
49. Moulders	725.10	-	-	Middle Pass ITI Certificate with some exp.	Matric ITI Certificate 2 yrs. exp.	Matric ITI Certificate 2 to 3 years experience
50. Sampleman	727.90	-	-		Middle with 6-months exp.	Middle with 2 yrs. exp., Matric or Intermediate preferred.
51. Foreman/ Supervisor, Paper, Pulp & Paper Making	730.20	Matric with 4-yrs. exp.	SSLC 2-yrs. exp.	Matric O.T.I. Wireman	Matric O.T.I. Wireman Diploma in Printing or Diploma in Packing	Matric Diploma in Printing or Diploma in Packing with 2 yrs. exp.
52. Band Saw Operative	732.25	-	-		Experience in the line	Middle standard, experienced in Operating circular Saw, Grass cut Saw, Jig Saw.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
chine erator	733.10	S.S.L.C. with some experience	Matric with 3-yrs. exp.	Middle Pass with 5-yrs. exp.	Observed as unskilled and promoted	Matric I.T.I. Diploma 2-3 yrs. exp.
rinder	733.15	-	-		Observed as unskilled and promoted	8th Standard 2-yrs. exp.
Digester	733.20	-	-	8th standard with some exp.	Middle/Matric preferred (Middle pass (with 6months (to 1 yr. exp.	Matric or Middle with 2 yrs. exp. (Middle pass 6 months (to 1 yrs. exp.
Paper sorter	733.25	-	-	-		
Bleacher, Paper Pulp	733.50	-	-	-	Matric with experience	
Beaterman, Paper pulp	733.55	-	-	-	Matric	Matric
Deckleman	733.90	-	-	Middle Pass	Middle pass with some exp.	Matric, 2 to 3 yrs exp.
Finishers	734.35	-	-		-	Matric with 5 years experience
Vatman, Handmade Paper	734.40		-	Matric 5 yrs. exp.		
Driesman	734.55		-	-	Middle with 5 yrs. exp. Matric preferred	Middle with 5 yrs. exp. Matric preferred

APPENDIX-VII (Contd.),

(1)	(2)	(3)	(4)	(5)	(6)	(7)
63. Calenderman	734.65			Matric with 5 yrs. experience	-	1. Matric 2. Trained 3. 3 years experience
64. Miller	741.15	-		-	-	1. Matric 2. I.T.I. Certificate 3. 2-5 yrs. exp.
65. Winders	752.70	-		Matric with some experience	-	1. Matric 2. 3 years experience
66. Printers	753.30	-	Matric with 5 yrs. exp.	Matric, wO years experience	Matric, ITI diploma with 2 yrs. experience	-
67. Carpenter	811.10	-	Literate with exp. in the trade	Trade by Carpenter experience	1. Matric 2. ITI Diploma preferred	1. Matric 2. ITI Diploma Holder 3. With some exp.
68 Router, Wood	813.30 (813.90)	-	-		Matric, ITI diploma with 2 yrs. experience	1. Matric 2. ITI Certificate 3. 2-5 yrs. exp.
69. Blacksmith	831.10	-	-	Literate 5 yrs. exp.	8th/Matric with ITI Certificate, 2 yrs. exp.	1. Matric 2. ITI Diploma 3. 2-3 yrs. exp.
70. Hammerman	831.40	Literate	Literate	Literate	Literate with some exp.	Literate with some experience
71. Marker, Metal	832.10	-			Literate/Matric Trade certificate preferred	1. Matric with 5 yrs. experience in trade 2. SSLC & ITI diploma Certificate

(1)	(2)	(3)	(4)	(5)	(6)	(7)
72. Machinist (General)	835.10	-	Matric with ITI certificate	Middle with exp. SSLC with exp. preferred	Matric with ITI certificate	Matric with ITI ficate 3 yrs. experienc
73. Turners	835.15			Matric with some experience	Matric ITI Certificate	1. Matric 2. ITI Certifica 3. 5 yrs. exp. in trade
74. Shapers	835.25					1. Matric 2. ITI Certifica 3. 5 yrs. exp.
75. Varnishers	836.30		Literate. 5 yrs. exp	Matric	1. Matric 2. ITI Certificate	1. Matric/SSLC 2. ITI Certifica 3. With some exp.
76. Supervisor & Foreman, Machinery Fitting & Repairing	840.10			Intermediate 10 yrs. exp.		B.Sc
77. Fitter General	842.20		VIII Standard with some exp.	VIII Standard Matric preferred	1. Matric 2. ITI Certificate	1. Matric 2. ITI Certifica 3. 2 years exp.
78. Automobile Mechanic	843.30			8th Standard ITI Certificate	1. Matric 2. ITI Certificate 3. Experien	As in col. (6)
79. Refrigerator Mechanics	845.70				Matric/Inter ITI Certificate	Matric/Intermedia with science ITI certificate 2 years exp.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
80. Electrician	851.10		-	Matric with Science subject PWD Diploma	1. Matric with Sc. 2. Electrician in Wireman ITI Certificate	1. Matric with Sc 2. ITI Certificat 3. 5 yrs. exp.
81. Wireman	855.10		-		1. Matric 2. ITI Certificate 3. 2 yrs. exp.	1. Matric 2. ITI Certificat 3. 2 to 3 yrs. ex
82. Telephone & Telegraph installing & repairing Operatives	856.90		-		1. Matric 2. ITI Certificate with exp.	1. Matric 2. ITI Certificat 3. 2-5 yrs. exp.
83. Rewinder	859.90	-	-	Matric ITI Certificate preferred		
84. Plumbers	871.10	-	-		8th standard with ITI certificate 3 yrs. exp.	
85. Welders	872.10		-	VIII standard or Matric	1. Matric 2. ITI Certificate	1. Matric 2. ITI certificat 3. 3-5 yrs. exp.
86. Tinker	873.50		-		VIII Standard 5 yrs. exp.	
87. Supervisor & Foreman, Paper Bank Making	910.10	Experiencehand Ex-service Personnel	Matric/Non-Matric with some exp.	Matric/SSLC preferred experience-hand	1. B.Sc. 2. Degree in Chemical Engineering 3. SSLC/Graduate	1. Diploma in Chemical Engineering 2. B.A./B.Sc. with 5 yrs. exp.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
8. Boiler Attendant	962.20	-	-	1st Class Certificate in Boiler Attendent trade	1st class certificate of completion of Boiler	1. Matric/Intermediate 2. ITI certificate 3. Long experience
9. Hoist Operator	973.70	-	-	-	-	Fine health and exp. in the line
0. Crane Operator	973.90	-	-	-	-	Fine Health & exp. in the line, Driving Licence in heavy machinery or heavy equipment operator-courses.
1. Dumper Operator	975.45	-	-	-	Matric ITI Certificate	VIII Std. or Matric ITI Certificate Exp. in trade
2. Tractor Driver	979.10	-	-	-	Literate Driving Licence	Literate, valid driving licence with some experience
3. Liftman	979.30	-	-	-	-	1. Matric 2. with 5 yrs. exp.
[illegible] Driver Truck	986.60	-	-	-	Literate valid driving licence with some exp.	1. Matric 2. ITI Driving certificate 3. 2-5 yrs. exp.

APPENDIX-VIII

AVENUES OF PROMOTION

S. No	N.C.O No.	Occupation from which promotion is possible	N.C.O. No.	Occupation to which promotion is possible
(1)	(2)	(3)	(4)	(5)
1.	001.60	Industrial Chemist	027.10	Production Manager/ Chief Chemist
2.	010.30	Laboratory Assistant		S I & II
3.	021.10	Civil Engineer		Engineer Incharge
4.	022.10	Electrical Engineer		do
5.	023.10	Mechanical Engineer	023.40	Works Manager
6.	024.10	Chemical Engineer		Superintendent Engineer/Head of Division
7.	027.10	Industrial Engineer		
8.	029.15	Asstt. Instrument Manager	029.10	Instrument Manager
9.	029.30	Jute Technologist	029.25	Technologist Incharge
10.	029.73	Paper Technologist	243.30	Factory Manager/Shift Incharge
11.	030.20	Draughtsman(s)		Sr. Draughtsman
12.	030.40	Draughtsman (M)	031.10	Supervisor
13.	031.10	Supervisor (c)		
14.	032.10	Shift Foreman		Foreman Incharge
15	039.20	Tracer		
16.	039.30	Blue Print Boy		
17.	053.20	Horticulturist		Sr. grade
18.	070.10	Physician General		Medical Officer
19.	076.20	Compounder		
20.	080.30	Dresser		
21.	084.30	Industrial Nurse		
22.	089.20	Theatre Attendent		

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(1)	(2)	(3)	(4)	(5)
23.	089.30	Sanitary Inspector		Sr. grade
24.	120.10	Accountants	120.10	Sr. Accounts Asstt. Deputy General Manager/Chief Accountant
25.	136.10	Personnel Manager		Sr. grade
26.	137.10	Labour Officer		Sr. Labour Officer
27.	142.10	Legal Officer		Sr. grade
28.	169.50	Liaison Officer		Sr. grade
29.	220.30	Manager Marketing		Sr. grade
30.	243.10	Working Proprietor	220.30	General Manager/ Secretary.
31.	260.30	Canteen Manager	260.20	Director Lodging & Catering Services
31-A.	300.10	Office Incharge	299.90	Asstt. Manager
32.	302.10	Accounts Asstt./Office	301.10	Section Incharge Sr. Asstt.
33.	320.10	Stenographers		Sr. grade
34.	323.10	Key Punching Operator	341.20	Sorting Machine Operator
35.	**330.20**	**Accounts Clerk**	**120.10**	**Head Accountant**
36.	331.10	Cashier		Accounts Asstt.
37.	340.10	Comptist		Sr. Comptist
38.	350.10	Clerks		Sr. grade Accounts Asstt.
39.	351.10	Supdt. Stores	351.10	Store Controller Incharge
40.	352.10	Telephone Operator cum Receptionist		
41.	358.90	Unskilled Operator cum Receptionist		
42.	369.90	Transport Foreman		Sr. Grade
43.	411.20	Purchase Manager	411.20	Sr. Grade
44.	420.10	Sales Representative		Sr. Grade

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(1)	(2)	(3)	(4)	(5)
45.	522.90	Canteen Attendent	775.30	Cook
46.	541.10	Sweeper	541.20	Sweeper
47.	570.20	Fire Officer		Sr. Fire Officer
48.	573.10	Security Inspector		Chief Security Officer
49.	660.10	Forest Supervisor		Circle Officer
50.	713.10	Driller		Head Driller
51.	715.50	Loco Driver		
52.	715.65	Box Maker		
53.	720.50	Supervisor		
54.	721.30	Powder Maker/Mixer		
55.	721.40	Convertorman		Head Convertorman
56.	721.90	Furnace Operative		
57.	722.90	Rolling Mill Operatives		
58.	725.10	Moulder		
59.	725.60	Core Makers Attendent		
60.	727.40	Asstt. Block Keepers		
61.	727.90	Sampleman		
62.	730.20	Foreman		Technical Superintendent/Shift Engineer
63.	732.25	Bank Saw Operative		
64.	732.40	Cross Cutter	976.10	Packer Incharge
65.	733.10	Machine Operator	850.40	Charge Hand
66.	733.15	Grinder		
67.	733.20	Digester	733.55	Beaterman
68.	733.25	Paper Sorter		

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(1)	(2)	(3)	(4)	(5)
70.	733.45	Caustiman(Digester)	733.45	Caustiman
71.	733.50	Bleacher Paper Pulp	733.57	Evaporatorman
72.	733.55	Beaterman Paper Pulp	733.55	Head Beaterman
73.	733.90	Deckerman	835.65	Felt boy/Washer & Tower Attendents
74.	734.20	Wire boy		M G Attendents/IInd Asstt./1st Asstt./ Asstt. Mistry
75.	734.35	Finishers		Line Checkers
76.	734.40	Vatman Hand made Paper		Chest Attendents/ Asstt. Mistry
77.	734.55	Direrman		Direrman
78.	734.65	Callenderman		S I & II
79.	734.90	Paper Mechanic		Asstt. Mistry
80.	741.15	Miller		
81.	741.30	Chemical Papor		
82.	742.20	Cooker/Bitterman		
83.	751.50	Cardtenter cetter		
84.	752.70	Winders		
85.	758.30	Printers		Head Printer/Supervisor Printing
86.	811.10	Carptanter		Head Carpenter
87.	813.30	Router, wood		
88.	831.10	Blacksmith		
89.	831.40	Hammerman	831.10	Blacksmith
90.	832.10	Marker, Metal		
91.	893.90	Tool makers		
92.	835.10	Machinist General		
93.	835.15	Turners	835.15	Head Turner/Charge Hand

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(1)	(2)	(3)	(4)	(5)
94.	835.25	Shapers		
95.	835.30	Planner		
96.	836.30	Varnishers		
97.	840.10	Supervisor and Foreman Machinery Fittings and Repairing		
98.	841.20	Mechanic, Precision Instrument Mechanical		
99.	842.20	Fitter	850.40	Charge Hand
100.	843.30	Automobile Mechanic		
101.	845.70	Refrigerator Mechanics		
102.	851.10	Electrician	851.10	Asstt. Electrician/ Head Electrician
103.	855.10	Wireman/Wireboy	851.10	Electrician
104.	856.90	Telephone and Telegraph Installing and Repairing Operatives		
105.	959.50	Rewinder	734.15	Machineman
106	871.10	Plumbers		
107.	872.10	Welders		Charge Hand
108.	873.50	Tinker	873.50	Head Tinsmith
109.	910.10	Supervisor and Foreman, Paper and Paper Board Making	029.15	Engineer
110.	919.90	Paper & Paper Products Makers		Chief Paper & Paper Products Maker
111.	962.20	Boiler Attendents		Boiler Trindal
112.	969.10	Tender Breaker		
113.	973.70	Hoist Operator		

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(1)	(2)	(3)	(4)	(5)
114.	973.90	Crane Opertor		HS I & II
115.	975.45	Dumper Operator		
116.	979.10	Tractor Driver		Driver
117.	979.30	Liftman		
118.	986.60	Driverd Truck		Driver
119.		Other Skilled workers		
120.		Unskilled workers		

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APPENDIX-IX

STATEMENT SHOWING THE IN-PLANT TRAINING FACILITIES AVAILABLE WITHIN THE INDUSTRY

S. No	N.C.O	Occupation	Number of trainees as on 31st Dec.1973	Entry qualification	Duration of the course	How Recruited	Number trainee absorbe in the during year 19
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	010.30	Laboratory Attendent	2	S.S.L.C.	3 years	By a selection Committee	2
2.	021.10	Civil Engineer	1	1st or High 2nd Class degree in Civil Engineering	2 years	By a selection Committee	1
3.	022.10	Electrical Engineer	35	B.E.(Elect.) 1st or high 2nd class diploma in Electrical Engg.	1 year 3 year	Through interviews and selection	32
4.	023.10	Mechanical Engineer	34	B.E.(Mech.) 1st or high 2nd class diploma in Mechanical Engg.	1 year 3 years	- do -	31
5.	024.10	Chemical Engineer	13	B.E. (Chemical)	1 year	- do -	10
6.	029.73	Paper technologist	5	Degree or diploma in Paper Technology 1st or high 2nd class	1-2 yrs.	- do -	5
7.	211.20	Executive trainees	10	1st or high 2nd class graduate Mech./Civil/Elect. Engg. or high 2nd class post graduate diploma in pulp & Paper technology or M.Sc. 1st class.	2 years	- do -	10
8.	243.30	Management trainees	6	Degree in Engg. or Graduate or post-graduate in Arts, Commerce and Science	1 year	Advertisement/E.E.	4
9.	350.10	Office Clerical trainees	8	Graduate	3 years	- do -	8
10.	725.20	Moulder	1	SSLC I.T.I.	3 years 1 year	- do -	1

APPENDIX-IX(CONTD.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	
11.	733.15	Beaterman	1	S.S.L.C.	1 year	Advertisement/E.E.	
12.	734.10	Trainee Operator	130	SSLC) I.T.I.)	2 years 1-2 years	 - do -	
13.	734.30	Cutters	1	S.S.L.C.	3 years	- do -	
14.	734.35	Finishers	26	8th	2 years	- do -	1
15.	734.90	Mechanic Maintenance	211	S.S.L.C.	3 years	- do -	18
16.	740.62	Puncher	2	S.S.L.C.	3 years	- do -	
17.	811.10	Carpenter	4	Matric	2 years	- do -	
18.	819.20	Pattern Maker	3	Middle	3 months	- do -	
19.	835.15	Turner	21	S.S.L.C.) I.T.I.)	3 years 1 year	i)Through Emp. Exchange ii)Under Apprenticeship Act	 1
20.	841.15	Instrument Mechanic	14	S.S.L.C.) I.T.I.)	3 years 1 year	iii)Direct - do -	 1
21.	842.10	Fitter	60	S.S.L.C.) I.T.I.)	3 years 1 year	i)Under Apprenticeship Act ii) Direct	 3
22.	843.30	Motor Vehicle Mechanics	2	S.S.L.C.	2 years	Direct	
23.	845.50	Mechanic Maintenance	4	S.S.L.C.	1 year	Apprenticeship Act	
24.	855.10	Wireman	6	(I.T.I. (Course (8th Standard	2 years)) 3-yrs)	Direct	
25.	855.90	Electrician	25	S.S.L.C.) I.T.I.)	2 years) 1 year)	Direct	1
26.	873.10	Sheet metal	1	Middle	3 months	- do -	
27.	872.70	Welder	11	I.T.I.) S.S.L.C)	3 years) 1 year)	- do -	
28.	883.20	Machine Operator	6	S.S.L.C.	3 years	E.E.	
29.	922.10	Lino Operator	5	S.S.L.C.	3 years	i)Through Emp. Exchange ii) Direct by advertisement	
30.	922.60	Process Cameraman	3	S.S.L.C.	3 years	- do -	
31.	923.50	Setter Press Machine, Operator	4	S.S.L.C.	3 years	Direct or through Emp.Exch.	
32.	923.90	Printers	10	I. Sc.	5 months	- do -	
33.	926.50-	Engraver	1	S.S.L.C.	3 years	- do -	
34.	926.90	Photoengraving Operatives	60	Read & Write	3-yrs.	- do -	

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APPENDIX-IX (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
35.	961.30	Steam Turbine Operator	4	S.S.L.C.	2½ yrs. to 3 years	i) Apprentice Act ii) Direct iii) Employment Exchange.	2
36.	961.50	Switch Board Attendent	4	S.S.L.C.	3 years	Sponsored by the Govt.	2
37.	962.30	Boiler Attendent	18	I.T.I.) S.S.L.C.)	1 year) 3 years)	Sponsored by the Govt.	11
38.	974.53	Fork lift Operator	1	I.T.I.	3 years	Direct	1
		TOTAL =	743 (100%)				574 (77.2%)

S. No	N.C.O.	Occupation	Number of vacancies occurred	Number that could not be filled	Period for which the vacancies are unfilled	ow the work as managed ithout this skill	REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(3)
1.	016.30	Laboratory Assistant	1	1	2-months	Internal arrangement	
2.	022.10	Electrical Engineer	5	3	6-12 months	Managed by the existing staff	
3.	023.10	Mechanical Engineer	8	5	6 - 8 months	- do -	
4.	024.90	Chief Engineer	2	2	6-months	Managed by the less experienced staff	
5.	029.73	Pulp & Paper Technologist	2	2	10-months	By overtime, and officiating	
6.	030.90	Draughtsman	1	1	2-months	work suffered	
7.	120.10	Chartered Accountant	4	2	5 - 6 months	Managed by less qualified persons	
8.	243.30	Asstt. Manager	1	1	12-months	-	
9.	320.20	Stenographer	3	2	6-months to 1-year	Managed by other staff members	
10.	350.10	Clerk	2	2	- do -	- do	
11.	351.10	Store-keeper	7	5	- do -	- do -	
12.	352.20	Receptionist	1	1	12-months	-	
13.	730.20	Foreman	8	8	6-months to 36-months	work suffered	
14.	734.10	Machineman	10	10	8-months to 36-months	work suffered	
15.	734.30	Finisher & Cutter	25	15	8-months to 36-months	work suffered	
16.	734.90	Paper Makers	45	44	6-months to 36-months	By internal arrangements/by paying overtime	
17.	811.10	Carpenter	2	2	6-months to 12-months	-	
18.	835.15	Turner	2	2	6-months to 12-months	By internal arrangements/by paying overtime	
19.	841.15	Instrument Mechanic	5	5	36-months	By overtime payments	
20.	842.10	Fitter	4	4	6-8 months	By making internal arrangements	
21.	855.90	Electrician	8	6	6-12 months	By paying overtime	
22.	872.70	Welder	2	2	12-months	work suffered	
23.	921.90	Compositor	2	2	- do -	By officiating arrangements	
24.	923.50	Printer	4	4	12-months	work suffered	
25.	927.90	Binder	1	1	- do -	- do -	
26.	962.20	Boiler Attendent	10	9	6-12 months	By making overtime payments/by internal arrangement.	
		TOTAL	165	141		-	

APPENDIX-XI

STATEMENT SHOWING ADDITIONAL INVESTMENT, OUTPUT AND EMPLOYMENT

S. No	State/Union Territory	Item	Additional investment to be made		Additional output proposed to be made		Additional employment anticipated to be generated	
			During the next three years 1974-76	During the next five years 1974-78	During the next three years 1974-76	During the next five years 1974-78	During the next three years 1974-76	During the next five years 1974-78
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	Andhra Pradesh	1. New units	225.00	225.00	40.50	54.00	10	10
		2. Expansion in the new units	972.00	975.00	1251.50	2011.50	200	210
		3. Modernisation of existing units	-	-	-	-	-	-
		TOTAL	1197.00	1200.00	1292.00	2065.50	210	220
2.	Delhi	1. New units	9.00	17.00	-	-	22	42
		2. Expansion in the new units	-	-	-	-	-	-
		3. Modernisation of existing units	-	-	3.00	3.00	6	6
		TOTAL	9.00	17.00	3.00	3.00	28	48
.	Haryana	1. New units	-	-	-	-	-	-
		2. Expansion in the new units	10.00	10.00	35.00	55.00	2	5
		3. Modernisation of existing units	3.00	3.00	-	-	-	-
		TOTAL	13.00	13.00	35.00	55.00	2	5

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APPENDIX-XI (Contd.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4.	Gujarat	1. New units	20.00	20.00		-	8	-
		2. Expansion in the new units	75.00	240.00	26[illegible]	397.20	125	265
		3. Modernisation of existing units						-
		TOTAL	95.00	260.00	264.80	397.20	133	273
5.	Karnataka	1. New units	-	-	-	-	-	-
		2. Expansion in the existing units	20.00	20.50	693.90	1947.24	675	703
		3. Modernisation of existing units	-	-	-	-	-	-
		TOTAL	20.00	20.50	693.90	1947.24	675	703
6.	Kerala	1. New units	-	-	-	-	-	-
		2. Expansion in the existing units	750.00	1000.00	550.00	1300.00	450	750
		3. Modernisation of existing units	-	-	-	-	-	-
		TOTAL	750.00	1000.00	550.00	1300.00	450	750
7.	Madhya Pradesh	1. New units	-	-	-	-	-	
		2. Expansion in the existing units	1824.62	1824.62	1217.92	1217.92	20	20
		3. Modernisation of existing units	41.51	41.61	-	-		
		TOTAL	1866.13	1866.13	1217.92	1217.92	20	20
8.	Maharashtra	1. New units	532.50	540.00	406.60	428.80	503	519
		2. Expansion in the existing units	147.95	163.40	1457.40	1793.32	155	188
		3. Modernisation of existing units	27.20	27.20	108.50	113.50	89	111
		TOTAL	707.65	730.00	1972.50	2345.62	747	818
9.	Orissa	1. New units	-	-	-	-	-	-
		2. Expansion in the existing units	-	-	-	-	-	-
		3. Modernisation of existing units	-	-	-	-	-	-
		TOTAL	-	-	-	-		

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APPENDIX-XI (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10.	Punjab	1. New units	-	-	-	-	-	-
		3. Expansion in the existing units	1.00	5.00	-	-	-	-
		3. Modernisation of existing units	-	-	-	-	-	-
		TOTAL	1.00	5.00	-	-	-	-
11.	Rajasthan	1. New units	-	-	-	-	-	-
		2. Expansion in the existing units	0.50	0.50	1.00	1.00	13	13
		3. Modernisation of existing units	0.50	0.50	1.00	1.00	15	15
		TOTAL	1.00	1.00	2.00	2.00	28	28
12.	Tamil Nadu	1. New units	-	170.00	-	-	10	216
		2. Expansion in the existing units	1814.60	1822.60	594.27	604.27	641	655
		3. Modernisation of existing units	220.00	220.00	492.75	492.75	300	300
		TOTAL	2034.60	2212.60	1087.02	1097.02	951	1171
13.	Uttar Pradesh	1. New units	82.[illegible]	126.00	103.00	153.00	155	175
		2. Expansion in the existing units	2.16	3.16	7.10	12.60	21	33
		3. Modernisation of existing units	1.05	2.05	2.00	4.00	10	10
		TOTAL	86.71	130.21	112.10	169.60	186	218
14.	West Bengal	1. New units	300.50	1200.50	400.60	424.50	5	5
		2. Expansion in the existing units	475.20	875.20	995.00	1000.00	185	385
		3. Modernisation of existing units	3.50	3.50	24.00	24.00	7	7
		TOTAL	779.20	2079.20	1419.60	1448.50	197	397
	ALL INDIA TOTAL	1. New units	1169.50	2297.50	950.70	1060.30	713	975
		2. Expansion in the existing units	6093.03	6939.98	7067.89	10345.05	2487	3219
		3. Modernisation of existing units	296.76	297.76	631.25	643.25	427	449
		TOTAL	7559.29	9535.24	8649.84	12048.60	3627	4643

APPENDIX-XII

ADDITIONAL MANPOWER REQUIREMENTS OCCUPATION-WISE

S. No.	N.C.O No.	Occupation	Estimated man-power requirement By the end of 1979	 by the end of 1981
(1)	(2)	(3)	(4)	(5)
1.	001	Chemists (excluding Pharmaceutical Chemists)	165	285
2.	010	Physical Science Technicians	30	50
3.	021	Civil Engineers	5	10
4.	022	Electrical & Electronic Engineers	70	125
	023	Mechanical Engineers	150	230
	24	Chemical Engineers	75	130
	7	Industrial Engineers	20	35
		Architects, Engineers, Technologists and Surveyors n.e.c.	40	65
		Draughtsman	50	80
		Civil Engineering Overseers and Technicians	20	35
		lectrical & Electronic Engineering seers & Technicians	10	20
		neering technicians n.e.c.	10	15
		ians & Surgeons, Allopathic	5	10
		ses	15	30
		lators, Medical Asstts.	5	10
			20	35
		Medical & Health		

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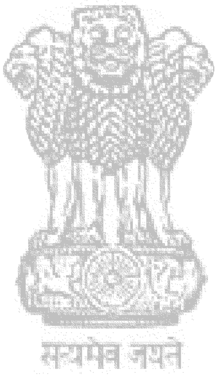
(1)	(2)	(3)	(4)	(5)
25.	300	Clerical Supervisors (Office), Superintendents, Head Clerks & Section Heads	45	75
26.	302	Office assistants	125	220
27.	320	Stenographers & Steno-typists	225	390
28.	323	Card & Tape Punching Machine Operatives	5	5
29.	330	Book-keepers & Accounts-Clerks	40	65
30.	331	Cashiers	25	50
31.	340	Book-keeping & Calculating Machines Operators	10	20
32.	350	Clerks, General	1105	19[illegible]
33.	351	Store-keepers & Related workers	155	
34.	352	Receptionists	5	
35.	358	Office attendents (Peons, Daftries etc.)	425	
36.	369	Transport & Communication Supervisors n.e.c.		
	3	Clerical & Related workers		
37.	411	Purchasing Agents		
38.	420	Technical Salesman & Service Adv		
	4	Sales Workers		

(1)	(2)	(3)	(4)	(5)
51.	727	Metal drawers and Extruders	105	180
52.	730	Supervisors & Foremen, Paper Making	1560	2730
53.	732	Wood processing workers	5	10
54.	733	Paper pulp preparers	1420	2475
55.	734	Paper makers	1325	2310
56.	741	Crushers, Grinders & Mixers	40	75
57.	742	Cookers, roasters & related heat treaters	30	55
58.	749	Chemical Processors & related workers n.e.c.	75	130
59.	752	Spinners & Winders	15	25
60.	758	Knitters	-	-
61.	811	Carpenters	10	15
62.	813	Wood working machine operators	25	40
63.	831	Blacksmiths, Hammersmiths & forging press operators	70	115
64.	832	Metal markers	25	40
65.	833	Tool makers & Metal Pattern makers	5	10
66.	835	Machine tool operators	180	310
67.	836	Metal grinders, Polishers & Tool sharpeners	20	35
68.	840	Supervisors & Foremen, Machinery fitting, Assembling & precision Instrument making (except electrical)	40	65
69.	841	Precision Instrument Makers	45	80
70.	842	Machinery fitters & Machine Assemblers	1015	1770
71.	843	Mechanics	150	265
72.	845	Mechanics, Repairman other	25	40
73.	851	Electronics, Electrical fitters & related workers	230	405
74.	855	Electrical wireman	75	130
75.	856	Telephone & Telegraph Installers & repairmen	20	30
76.	859	Electrical fitters & Related Electrical & Electronic workers n.e.c.	50	90
77.	871	Plumbers & pipe fitters	45	80
78.	872	Wleders & flame cutters	110	190
79.	873	Sheet metal workers	20	35
80.	910	Supervisors & Foremen, Paper & Paper Board Making	245	425
81.	919	Paper & Paper Board Products Makers n.e.c.	75	130
82.	929	Printers & Related workers n.e.c.	5	10
83.	962	Boilerman & fireman	215	375
84.	969	Stationary engine & related equipment operators n.e.c.	10	20
85.	973	Crane & Hoist Operators	35	60
86.	979	Material Handling Equipment Operators n.e.c.	5	10
87.	986	Tram Car & Motor Vehicle Drivers	240	420
88.	999	Skilled & Unskilled workers n.e.c.	8848	15464
7,8 & 9		Production & Related workers, Transport Equipment Operators and Labourers	16688	29129
		GRAND TOTAL	20788	36274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